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ABSTRACT

Recommending that every state increase the duration and intensity of academic learning time (ALT) in schools, this working paper provides a rationale, discusses related research, offers guidelines for selecting and implementing activities, and describes actions schools can take to implement change. In the discussion, duration refers to the total amount of time students are engaged in learning, intensity refers to the quality of that engagement, and ALT is defined as the amount of time students are engaged in an academic task that they can successfully perform. It is asserted that research findings generally indicate the more ALT a student experiences the more the student is learning. Specific research discussed focuses on ALT and student achievement, the relationship of instructional processes and classroom environment to student learning, the distinction between allocated time and engaged time, and approaches taken to improve the duration and intensity of time used in schools. Educators are urged to (1) use existing resources to help teachers understand ALT; (2) reward exceptional students and teachers; (3) provide aides, volunteers, or tutors to teachers attempting to improve ALT; (4) implement training to improve teachers' knowledge of effective instructions; (5) reduce classroom interruptions; and (6) check for discrepancies between how time should be and actually is spent in classrooms. (RH)

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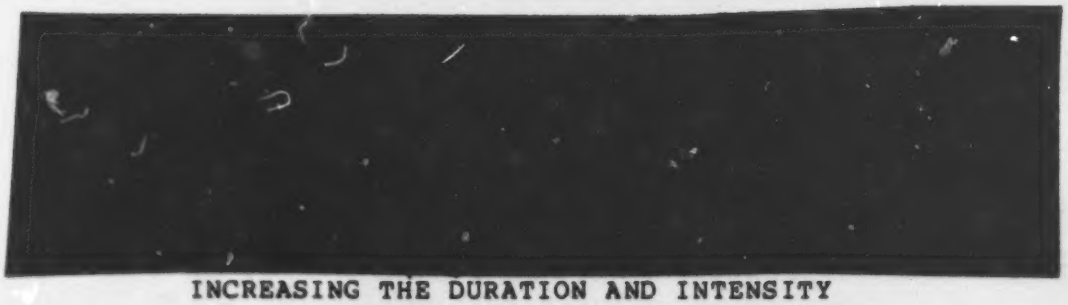

INCREASING THE DURATION AND INTENSITY OF ACADEMIC LEARNING TIME IN SCHOOLS

by

Cheryl M. Chase
and
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Working Paper No. TF-83-3

Background Papers for the
Task Force on Education for Economic Growth

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INTRODUCTION

Education is not a voluntary affair in this country; children are required to spend five to seven hours in school each day. How that time is used is a concern of more than those directly involved. It ultimately affects all institutions responsible for the health, safety and economic well-being of the country. These institutions currently are faced with a large number of young people who wish to work but lack the skills needed to perform adequately. We know that approximately 13% of all 17-year-olds in the United States are functionally illiterate, that science achievement scores are declining and that verbal and mathematics scores on the College Board Scholastic Aptitude Test each have fallen approximately 50 points between 1963 and 1980. We also know that business and military leaders report spending millions of dollars on remedial education programs in reading, writing and basic computation. The Navy, for example, reports that one-quarter of its recent recruits cannot read simple safety instructions and therefore do not have the basic skills needed to participate in the sophisticated training required by our modern military system (National Commission on Excellence in Education, 1983).

Given this situation, we have to ask whether we are effectively using the time we have available in schools and whether we are devoting enough time to the education of our youth. In addressing this problem, the Task Force on Education for Economic Growth recommends that "every state should increase both the duration and intensity of academic learning time in schools." "Duration" refers to the total amount of time students are engaged in learning. "Intensity" refers to the quality of that engagement. The task force recommends that schools begin by using more effectively the time already scheduled for learning, and also stresses the need to consider lengthening both the school day, the school year and establishing learning opportunities beyond the normal school day and school year.

1. NEED

Many discussions of the need to increase the duration and intensity of time in school emerge from comparisons made between the education system of the United States and other developed countries. The argument goes something like this. If other developed countries are catching up and in some sectors surpassing the rates of economic growth in the United States, we need to examine the type of education these countries provide to their students and evaluate our system in light of what we find. If we pursue this tack, we learn that it is not unusual for students in other industrialized nations to spend more time in school each day

(an average of eight hours as compared to six in the United States) and to spend more days in school each year (an average of 220 as compared to 180 in the United States). In addition, since other industrialized nations require all students in their schools to begin studying courses such as advanced mathematics, biology, chemistry and physics in the sixth grade, the overall time (based on class hours) these students spend on these subjects is about three times that spent by students in the United States who take a maximum of four years of mathematics and science in high school (National Commission on Excellence in Education, 1983).

While it is important for us to be aware of our relative standing among industrial nations of the world, such a perspective alone is insufficient. After all, if we followed the comparative approach to its logical conclusion, we could find ourselves saying that high illiteracy rates, high unemployment and significant waste of potential human talent are acceptable in the United States just as long as other countries allow similar conditions to develop and persist. Would most Americans agree to such a philosophy? We think not.

What we need to do is examine the extent to which our education system meets the needs of our students who ideally are preparing for productive participation in our democratic and open society. We need to look at how time is spent in schools and ask questions such as: Is the present time allocated for education being used as productively and appropriately as possible? What do we know about the effective use of time? What steps can we take to improve the productive use of time? And, does the length of time students spend in schools provide sufficient opportunities for students to learn what they need to know?

Finally, we need to increase awareness about the importance of education in this country. Unfortunately, schools are often viewed as places to "put" kids rather than as a means to invest in the future well-being of our nation. In the most recent Gallup Poll, the majority of people in the United States opposed lengthening the school year by one month (53% opposed, 37% in favor, 10% don't know) and opposed extending the length of the school day by one hour (55% opposed, 37% in favor, 8% don't know). It is interesting to note, however, that public opinion about the length of school days and years varies in urban, suburban and rural areas. Gallup reports:

> In fact, sentiment favorable to spending more time in schools increases as the size of the city grows. In cities whose population is one million and over, a majority of those respondents who expressed an opinion favor extending the school year and the school day. The reverse is true of those who live in small cities and towns. One obvious reason for this phenomenon is that many young people in our larger cities have nothing to do when they are out of school, whereas young people in

the smaller cities and rural communities tend to be occupied with chores (Phi Delta Kappan, September 1982, pp. 47-48).

We must not continue to make decisions about education based on short-term considerations such as "keeping the kids off the streets" or seeing that they are available for "chores." We must look at longer-term considerations such as how much time is needed to prepare students for productive and fulfilling participation in tomorrow's society.

2. RESEARCH

The Task Force on Education for Economic Growth calls for an increase in the duration and intensity of academic learning time in schools. In the research literature the term "academic learning time" (ALT) has a very specific meaning. It is defined as the amount of time a student spends engaged in an academic task that s/he can perform with a high degree of success. Research, which will be described in detail below, shows a positive relationship between ALT and student achievement. That is, the more academic learning time a student experiences, the more the student is learning (Fisher, Berliner et al., 1980).

If we were to observe a student during a particular lesson, how would we determine the amount of ALT he or she had accumulated? Let's take a concrete example. There are three factors to take into consideration. Assume that a second grade student is sitting in his or her seat and is ready for the daily arithmetic class that will focus on simple addition of numbers. The teacher has decided to spend one-half hour on the lesson. We refer to that one-half hour as the time allocated to the lesson. During the allocated time, the student will have an opportunity to learn. While it is obviously important to allocate time to a subject, simply providing the time does not insure that the student will learn. Therefore, the researcher also examines the amount of time the student was actively working or engaged in the task. After subtracting minutes the student might spend on activities such as sharpening pencils, talking to a friend or daydreaming, we would compute a measure of engaged time. For the sake of expediency, let's say the student was actively engaged for 20 minutes of the 30 minutes allocated. However, to obtain a measure of academic learning time, we also would need to examine the success rate the student was experiencing during the time he or she was engaged in learning. For example, a student actively engaged in addition problems, which were much too difficult, might be making correct responses at about the level of chance. That student would be experiencing low success and little learning would be taking place. If the student understood the addition problems and made only a few careless mistakes, we would say that student was

experiencing high success and hypothesize that learning was occurring. The student would be experiencing medium success if the correct answers were produced at a level clearly higher than chance but lower than what would be expected if the student had a firm grasp on the problems.

To determine the level of ALT in this example, the teacher or observer would have to examine the amount of allocated time, the amount of engaged time and the level of success. The frustrated or confused student actively engaged for 20 minutes during the lesson would be experiencing low success and would be accumulating little, if any, academic learning time. The highly engaged student, successfully completing most problems, would be accumulating 20 minutes of academic learning time. High success does not have to mean high effort was occurring (Fisher, Berliner et al., 1980). Success sometimes comes easily but other times it comes with great effort. However, it is also important to note that the tasks should not be so easy as to be unchallenging to the student:

> Generally it is expected that some balance between high and medium success tasks, with somewhat more activities at a high success level, will produce the most learning. Low success tasks would always be detrimental to learning (Fisher, Berliner et al., 1980, p. 10).

The concept of ALT and the definition provided above was developed by the Beginning Teacher Evaluation Study (BTES), a six-year study that sought to identify teaching activities and classroom conditions that support student learning in elementary schools. The study examined instruction in reading and mathematics in grades two and five. The BTES study was built on earlier studies of allocated time and engaged time. Although it is not the only study that can inform strategies for increasing the duration and intensity of academic learning time, it is perhaps the most significant.

In reviewing the research on time and its relationship to learning, we found many researchers suggesting caution in reviewing and using our current level of knowledge (Karweit, 1982; Good and Hinkle, 1982; Fenstermacher, 1980). While the research available can and should inform decisions about actions we might take, it does not provide a simple recipe for all of us to follow. For example, the BTES study did not take into consideration a number of factors that are likely to influence the relationship between time and student achievement (e.g., student ability, student motivation, peer influence, the curriculum) (Romberg, 1980). It also did not deal with student diversity in readiness for instruction, rate of learning and quality of learning (Karweit, 1982).

Nevertheless, it provides insight and understanding that can help teachers improve their performance. Raquel Muir, a sixth grade

teacher who used the BTES framework for making instructional changes in her classroom, concluded:

> ALT [academic learning time] is a powerful tool, not a prescription for how and when to use the tool. ALT as a concept is dynamic and ever-changing in each classroom, because it focuses on ever-changing and growing human beings. A teacher must make constant adjustments in practices within the year as well as from year to year . . . . I suggest that teachers "play" with the issues and concepts presented in BTES. Experiment with ideas and variables that appear relevant for your grade and classroom . . . . Interesting changes may occur for you (Muir, 1980, p. 212).

With all of the limitations in mind, we now move to what we have learned from BTES. Findings from the study were organized into two groups, one dealing with the relationship between ALT and student achievement and one dealing with the relationship between student learning and teaching processes/classroom environment (Fisher, Berliner et al., 1980).*

ALT and Student Achievement

1. The amount of time that teachers allocate to instruction in a particular curriculum content area is positively associated with student learning in that content area. Large variations were found in the amount of time teachers allocate to mathematics and reading. Teachers who allocated more time to a particular subject found higher levels of student achievement than teachers who allocated less time.

2. The proportion of allocated time that students are engaged is positively associated with learning. Classes varied from 50% to 90% in the amount of time students spent on-task. The longer students were engaged, the more they learned.

3. The proportion of time that students perform reading or mathematics tasks with high success is positively associated with learning. Students who are given tasks in a manner that allows them to experience high success have higher achievement scores, better retention of learning over the summer months and more positive attitudes toward learning.

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*For a more thorough discussion of each of these findings, see "Teaching Behaviors, Academic Learning Time and Student Achievement: An Overview" in Time to Learn (National Institute of Education, 1980), pp. 15-22.

4. The proportion of time that reading or mathematics tasks are performed with low success is negatively associated with student learning. Students who were frequently given materials at a level of difficulty above their present abilities learned less than students who were given materials appropriate to their previous levels of knowledge and skills.

5. Increases in academic learning time are not associated with more negative attitudes toward mathematics, reading or school. Some parents and researchers worry that additional amounts of allocated or engaged time might wear students out and cause negative attitudes towards learning. BTES did not find this to be a problem. In fact, those students experiencing high levels of success developed more positive attitudes.

Relationship of Instructional Processes and Classroom Environment to Student Learning

1. The teachers' accuracy in diagnosing student skill levels relates to student learning and academic learning time. Teachers who were able to diagnose student skill levels were more likely to prescribe appropriate instructional experiences and produce more student achievement than those who lacked diagnostic skills.

2. The teacher's prescription of appropriate tasks relates to student achievement and student success rate. When teachers prescribed learning experiences that were appropriate to the skills and knowledge levels of students, students generally achieved at higher rates.

3. More substantive interaction between the student and instructor is associated with higher levels of student achievement. Students were more actively engaged and learned more when they were interacting with a teacher than when they worked alone. Teacher aides, volunteers and tutors can be used to increase the amount of interaction with the student around an academic task.

4. Academic feedback is positively associated with student learning. When students received feedback about whether their answers were right or wrong, they tended to have higher engagement rates and higher levels of achievement.

5. Structuring the lesson and giving directions on task procedures were positively associated with high student success. Students who were given specific directions about what they were supposed to do and how it should be done, experienced higher success rates.

6. Explanation specifically in response to student need is negatively associated with high student success. Students who did not understand a task and had to individually ask the teacher for assistance experienced low rates of success. Teachers must make sure tasks are explained and structured so that all students have an opportunity to become productively engaged.

7. More frequent reprimands for inappropriate behavior are negatively associated with student learning. Reprimands were usually given to students who were not actively working and to students engaged in particularly difficult tasks. This suggests that the need to give frequent reprimands is a sign of trouble in other arenas.

8. The teacher's value system is related to academic learning time and to student achievement. Teacher emphasis on academic goals is positively associated with student learning. In classes where teachers stressed the importance of learning and emphasized academic rather than affective outcomes, students achieved at higher levels. The research does not deny the importance of considering students' attitudes and feelings. However, when less attention is paid to academic instruction, student achievement decreases.

9. A learning environment characterized by student responsibility for academic work and by cooperation on academic tasks is associated with higher achievement. In classes where academic goals were established and valued, students tended to work together more effectively and assume higher levels of personal responsibility.

In order to shed additional light on the findings of BTES and enhance our understanding of the concept of time in classrooms, we will review briefly other research on allocated time and engaged time.

Allocated Time

Allocated time refers to the actual amount of time available for students to learn. States set broad guidelines for the amount of time available by requiring students to attend school for a certain number of days each year and for a minimum number of hours each day. This time, however, is eroded by a number of factors including teacher strikes, student absence and school closings. At the building level, it is further eroded by interruptions in the classroom, transitions between classes, announcements and other noninstructional activities. The actual time a student has available for learning is ultimately a function of the amount of time the teacher devotes to teaching a particular subject.

It is clear that states and individual school districts determine, consciously or unconsciously, the time available for learning. Policy makers interested in increasing allocated time must examine current policies and practices that erode the amount of time available for learning and establish policies which maximize that time.

Research related to the relationship between allocated time and student achievement have produced a range of findings which are not all consistent with the BTES finding. After analyzing 35 studies related to time and learning, Cotton and Savard (1981, pp. 3-4) concluded:

> A review of the research studies which focused on allocated time suggested the following hypothesis: "There is a positive relationship between the amount of time allocated for studying a subject and achievement in that subject." Although the studies suggested this hypothesis, the picture which emerges from analysis of the studies is by no means clear. Considerable numbers of high quality studies support this notion, and nearly as many well-done studies deny it. Most of the supportive studies revealed a "modest, but persistent" relationship, especially for low-ability students and especially if greater time allotments are spent in interactive activities with the teacher rather than on homework or seatwork. Several of the studies state in their conclusions that, while time allocations are obviously necessary for learning to take place, increasing allocated time without a comparable increase in activities which facilitate learning is not likely to promote significant gains.

The value of the allocated time studies lies not in the ability of the studies to show a direct and significant relationship to student achievement. They do not do so. Rather, their significance lies in what we have learned about how time is allocated in schools. Tremendous variations occur in the amount of time students are provided to learn different subjects. For example, Fisher, Berliner et al. (1980) found that some fifth grade students received less than 1,000 minutes of instruction in reading comprehension during the school year while others received 5,000 minutes of instruction in the same subject. In a review of the literature, Graden (1982) summarized a number of research findings on allocated time. She pointed to (1) studies by Wiley and Harnischfeger (1974) who found that time allocated to schooling in one city ranged from 710 hours to 1,150 hours per year; (2) Berliner's findings (1980) that time allocated for mathematics at the second grade level ranged from 30 to 58 hours per year across the classes studied, and at the fifth grade level ranged between 18 and 53 hours per year; and (3) Jacobsen who reported variations in third grade classes of between 52.3 and 75.9 minutes per day in reading and 40.7 to 89.4 minutes per day

in mathematics. It is clear that some students are given three, four and even five times as much opportunity to learn a particular subject as others. How that allocated time is used will be discussed in the next section.

Engaged Time

Engaged time refers to that portion of allocated time during which the student is actually paying attention and actively trying to learn. Recent studies suggest that students are actively engaged in learning an average of 70% to 75% of the time allotted for instruction (Fisher et al., 1980; Karweit and Slavin, 1981). Significant variations have been found in the amount of time students are actively engaged. BTES found variations of as much as 40% in rates of student attentiveness (Fisher et al., 1980). Rosenshine (1979) reports engagement to be much greater (84%) during teacher-led instruction than during unsupervised seatwork (70%).

While many researchers have found a clear relationship between engaged time and learning (Harnischfeger and Wiley, 1976; Borg, 1980; Sirotnik, 1982), others are concerned about our lack of understanding of why significant variations exist in the amount of time a student spends engaged in learning (Karweit, 1982; Good, 1982). Although it is clear that additional research is needed to verify significant relationships between certain teacher behaviors and student engaged time, we believe that a substantial knowledge base already exists. Our belief is based on the fact that a considerable amount of research has been conducted on effective teaching and learning. While much of this research has not directly addressed the concept of engaged time, we suspect that future studies of effective teaching behaviors will show that those same teaching behaviors result in hign engagement rates for students. That is, the body of research on teaching and learning points to teaching behaviors that increase student achievement. The body of research on time points to the relationship between engaged time and student achievement. We suspect that the effective teacher is one who stimulates high levels of student engagement. Therefore, until research is conducted specifically in terms of student engagement and achievement, we recommend that schools use the existing knowledge on effective teaching practices.

A final body of research worth noting is that dealing with individual seatwork. Research shows that students in grades 1-7 spend between 50% and 75% of their time working alone at seatwork (Fisher et al., 1980). The BTES data show that engagement rates and levels of student achievement are lower in seatwork than in direct instruction. In a recent article, Rosenshine (1983) summarizes the research on improved engagement during seatwork. He states:

Student engagement during seatwork is usually increased by the following instructional procedures:

- More time is spent in lecture, discussion and guided practice -- that is, more time is spent preparing students for seatwork.
- The teacher structures the seatwork and directs the class through the first seatwork problems.
- Seatwork follows directly after guided practice.
- Seatwork is directly relevant to the demonstration and guided practice.
- The teacher actively circulates during seatwork, providing feedback, asking questions, and giving short explanations.

As indicated earlier in this section (p. 346), additional research on academic learning time is needed. Yet, as this section illustrates, we do have a base of research knowledge on which to examine current policies and practices at the state, district, school and classroom levels.

Current Activities

As the research suggests, a number of approaches can be taken to improve both the duration and intensity of time use in schools. The particular approach selected will be based on the best judgments of those involved. In a National Association of Secondary School Principals (NASSP) Curriculum Report (December 1980), Anderson provides an excellent review of school districts that have put the research on time into practice. He observes:

> Perhaps the most obvious characteristic of these exemplary programs is the very diversity of their approach to learning time. Some schools have chosen to develop a large-scale instructional approach such as mastery learning. Some have worked on specific aspects of instruction (e.g. teacher expectations, team learning, reinforcement, cyclic review). Others have focused on increasing student responsibility and decision making. Still others have concentrated on heightening awareness of time-on-task behavior. This diversity highlights the strength of the learning time concept. Learning time is seen as a key to improving student achievement, but the possibilities for implementation are many. The actual approach will depend on the types of students, the personality characteristics of teachers, and other "in-school"

variables. In all cases, planning to do something about increasing actual learning time is a necessary first step (pp. 10-11).

Specific programs described by Anderson are summarized below:

1. Denver Public Schools, Denver, Colorado. Denver instituted a mastery learning project with the goal of improving student achievement and attitudes by providing training to strengthen the principal's role as instructional leader. Principals were trained in the concepts and strategies of mastery learning and then assumed responsibility for planning appropriate inservice for teachers. Teachers responded positively and student achievement and attitudes were improved.

2. Johnson City Central School District, Johnson City, New York. The Johnson City Central School District improved their effective use of time by reducing the amount of time students spent moving from activity to activity within each class and the time needed to move between classes. Teachers also revised and expressed their expectations about the amount of time that would be allowed for a student to learn a particular skill or piece of knowledge. Rather than allowing infinite amounts of time for a particular learning, teachers stated to students what was expected to be learned in a certain time period. Time also was saved by the "cyclic review of prior learning ' where review of previous learning was incorporated into the regular instructional approach rather than being treated as a separate, after-the-fact activity.

3. Montevideo Public Schools, Montevideo, Minnesota. The Montevideo Public Schools instituted an individualized instructional program consisting of a <u>prescriptive</u> component of teacher directed activities developed on the basis of diagnostic test results and an <u>exploratory</u> component of activities selected by students on the basis of their interests. The program, which was designed to foster the development of self-responsibility and decision-making skills on the part of students features a "self-schedule system" where students decide when to work on prescribed activities and when to work on exploratory activities. The project produced gains in measures of self responsibility and time-on-task.

4. Philadelphia Public Schools, Philadelphia, Pennsylvania. The Philadelphia Public Schools instituted a program focused on increasing <u>expectations</u> for student achievement among students, teachers and principals. Schools analyzed the amount of time they spent off task and developed more efficient operations. Teachers became aware of their attitudes towards time on certain days (e.g., "You can't teach Friday afternoon or the day before a holiday") and changed

those expectations in positive ways. In addition, teachers identified exactly what needed to be taught during a school year and made plans to insure all important material was covered.

5. Pontiac City Schools, Pontiac, Michigan. Pontiac City Schools experimented with team learning as a means to improve time-on-task. Racially mixed teams of students with different levels of ability competed on instructional tasks in a game-like situation.

6. San Diego City Schools, San Diego, California. San Diego City Schools provided inservice training to principals and teachers on the research findings related to time-on-task. A clear understanding of these findings enabled school staffs to develop strategies that reversed the decline in reading scores the district had experienced.

7. Vance County Schools, Henderson, North Carolina. Vance County Schools experimented with the concept of time-on-task as a means to improve their Title I program. A reward system was established where students earned points for staying on task and lost points when they were off-task. The points accumulated were later converted into tangible rewards such as games, puzzles or opportunities to participate in social activities such as bowling or going to a movie.

Two other approaches were reported in "Academic Learning Time," a publication of the Educational Resources Information Center (ERIC) Clearinghouse on Educational Management (March 1982). In Austin, Texas the school system analyzed use of time in schools and found that students spent 20% of their time in noninstructional activities such as listening to announcements, taking out and putting away supplies or waiting for teacher instructions. The district publicized its findings among staff, emphasized the importance of supervision at the elementary school level, reduced time requirements of overlapping federal programs and worked with a local university to improve teachers' classroom management techniques. As a result, 65 to 95 additional hours of instruction were provided to students during the 1977-78 school year and elementary students at all grade levels improved their reading and mathematics scores (Davidson and Holley, 1979).

Finally, in Denver, Colorado the Mid-continent Regional Educational Laboratory (McREL) developed a four-day workshop for teachers who calculated their own time use in class, observed engaged time and success rates in colleagues' classrooms, identified areas where improvement was needed and examined strategies for improved use of time. Teachers then went to the classroom to apply their new understandings (Saily, 1981).

The efforts described by Anderson were reported as under way in December 1980. Although the authors of this paper did not have

the time or resources to conduct followup studies for each approach described, the approaches are nevertheless worthy of consideration by school districts. As school districts take action to improve students' academic learning time, they may modify any one approach, combine a number of approaches or use the ideas presented here as a basis for developing their own approach. What is important is that districts develop strategies that are informed by the research on academic learning time and a thorough knowledge of the current conditions in their schools.

3. CRITERIA

The following section outlines a number of activities that might be undertaken to increase the duration and intensity of academic learning time. There are no specific criteria for selection that can be applied to all situations. States, districts, schools and individual teachers should select those activities which make most sense to them, given their understanding of the environment in which they work.

Three important considerations should be kept in mind. First, a number of the action alternatives require little or no additional resources to implement and simply should be accomplished. Second, after an activity is initially selected, persons responsible for implementing that activity should go back and carefully re-read the research section of this paper for insights on successful implementation. Finally, none of the activities outlined will in and of themselves magically result in solutions to the problems that schools face. Rather, they represent the kinds of behaviors that districts could undertake to promote achievement among students.

4. ACTIVITIES

1. Use existing resources to help teachers develop an understanding of academic learning time.

If teachers have a clear understanding of academic learning time and its relationship to student achievement, they can begin to examine how time is used in their classrooms and take steps to use it more effectively. Academic learning time provides a framework for teachers to examine and improve their teaching practices. At a minimum, it suggests questions such as:

- How much time am I actually spending on different subjects?

- Do I want to spend more or less time or continue the same emphasis on those subjects?
- Are my students engaged?
- What do I do that results in greater levels of engagement and what behaviors seem to result in students being off-task?
- Am I giving my students work at an appropriate level of difficulty, or is the work too easy or difficult?
- Am I clearly communicating my expectations for achievement to my students?

As teachers ask these questions, they are likely to want to know more about strategies for improving academic learning time. This paper gives some specific guidelines (e.g., BTES findings, seatwork) and suggests other guidelines that can be more fully developed in individual classrooms.

If schools and districts expect teachers to use what we know about academic learning time, they must provide opportunities for teachers to learn about its elements, to experiment with strategies for improving academic learning time, and to share with colleagues information about strategies that are successful and unsuccessful. Initial awareness can be provided through staff meetings, by establishing committees of teachers to investigate the topic and report back to other teachers, through formal school or districtwide inservice training programs or simply by providing teachers with materials such as this paper.

The approach suggested above makes use of existing resources (e.g., staff meetings, dollars allocated to inservice). The approach requires district administrators to consciously use existing resources to improve the use of academic learning time. For example, district administrators would have to decide to use staff meetings for learning about academic learning time rather than for other purposes. If a limited amount of money is available in the inservice training budget, district administrators must use that money to focus on academic learning time.

The advantage of this approach is that it costs little. The disadvantage is that teachers may need or want additional training or time for sharing their experiences. Finally, since this approach provides awareness and opportunities for teachers to take action rather than prescribing action, some teachers will be more motivated and therefore more successful than others in making constructive changes.

2. <u>Provide rewards to teachers and/or students who produce exceptional gains in levels of achievement</u>.

Students achieve at exceptional rates when teachers work hard to analyze and improve the quality of their instruction and when students actively try to learn. It requires a joint effort that should be stimulated and rewarded in some way. A number of strategies can be used. For example, a school district can make improved academic learning time a priority, help teachers become aware of current knowledge on time and encourage teachers to work with students to improve achievement. The teachers or schools that produce the most significant gains in levels of student achievement could be recognized and given opportunities to share their experiences with others. Students also should be recognized. Student(s) of the Year programs could be established, not for individuals who necessarily earned the highest scores on achievement tests but for students who made the most significant gains in performance on tests. The same approach could be undertaken at the state level where a teacher, a school, a class of students or an individual student would be recognized and rewarded.

This approach has the advantage of stimulating teachers and students to perform at the highest possible levels. It also results in the identification of particularly successful teachers and students who can share ideas about their successes with others. It also has the advantage of low cost. Even if monetary rewards were made, the cost is relatively low. A potential disadvantage is that a district or state might not provide teachers with enough information or support to make improvements in the use of academic learning time.

3. Provide aides, volunteers or tutors to teachers engaged in efforts to improve academic learning time.

Some of the research suggests that achievement increases when students have more direct contact with teachers. Aides, volunteers or tutors can relieve teachers of time-consuming tasks needed to support effective instruction, increase the amount of time actually available for direct instruction and/or provide opportunities for teachers to learn about and experiment with strategies for improving academic learning time. Aides or tutors also can work with students in the elementary school classroom, monitor the work of students and provide immediate feedback. Since BTES found a relatively strong relationship between immediate feedback and achievement, this type of use of aides, volunteers or tutors has a direct potential of increasing engagement rates.

This approach has the important advantage of giving teachers time to think about and implement improvements. It has the disadvantage of being in and of itself insufficient for constructive change. That is, simply providing time for teachers to make improvements will not necessarily result in changes. Also needed are new skills and knowledge related to academic learning

time. Therefore, districts need to provide for training to maximize the use of the additional time that would be available. Costs would vary depending on whether volunteers were used or districts decided to pay for aides or tutors.

4. Review, select and implement a teacher training program to improve teachers' knowledge of effective instruction.

Recently a number of experimental studies have been conducted to identify and test teaching behaviors that promote higher levels of engaged time and/or achievement. In these studies, actual training materials are developed, teachers are trained and the results are evaluated. In the March 1983 issue of The Elementary School Journal, Barak Rosenshine identifies seven particularly successful studies and argues for use of the training materials developed in those studies in preservice and inservice education.

Tested materials have been developed for teachers at the elementary, junior high school and high school levels. Specific studies noted by Rosenshine include:

- "Texas First Grade Reading Group Study"
- "Missouri Mathematics Effectiveness Study" (for mathematics in grades 4-8)
- "Texas Elementary School Study"
- "The Texas Junior High School Study"
- "Organizing and Instructing High School Classes"
- "Exemplary Centers for Reading Instruction" (for reading in grades 1-5)
- "Direct Instruction Follow Through Program"

School districts interested in providing quality inservice training for teachers should refer to Rosenshine's article for additional information about those studies and then acquire and review the actual training materials.

This approach has the advantage of making use of materials that have been developed and tested rather than spending large amounts of money developing new programs. Even if dollars are required to obtain the materials and to deliver the training, such costs would be much less than if a district tried to develop its own program. The only disadvantage or perhaps limitation of this approach is that the materials may not match exactly the training needs of teachers in a particular school and would need to be modified. Whether or not this is a problem depends on the more-or-less perfect match between existing materials and the needs of a specific group of teachers.

5. Reduce unnecessary classroom interruptions.

One of the easiest ways to increase allocated time is to redu interruptions in classrooms. The school that causes or allow frequent disruptions communicates to students a lack of respect for learning. Where learning is valued, we find policies that support a serious learning environment. That environment is not disturbed by frequent announcements, the taking of telephone calls, students being pulled out of the classroom or discipline problems. Instead, learning tasks are well organized, students understand what they are supposed to be doing and they do it.

The advantage of this approach is that it takes no money to implement and large chunks of time often can be found. However, it is important that the time saved be used effectively. Teachers must value the time saved and make decisions as to how it can be most appropriately used.

6. Determine discrepancies between how time should be spent in classrooms and how it is actually spent.

In many studies of time use in classroom, observers note that teachers frequently are not consciously aware of the amount of time actually devoted to particular subjects. A number of approaches are possible to determine time use. Outside observers can be brought in to document the amount of time allocated to particular subjects and the amount of time students actually are engaged in learning. Teachers within a school can observe each other, document allocated and engaged time and help each other develop strategies to increase the intensity and duration of academic learning time. The particular strategy selected is not as important as setting in place some mechanism to assess the amount of time devoted to particular subjects. Once this has been done, the actual time use can be "evaluated" and priorities can be established. For example, if science instruction in three fourth grade classrooms ranges from 10 to 30 minutes a day, the school or district can determine how much time should be allocated to science and schedules can be modified accordingly. Similarly, if engaged time in 30-minute mathematics classes in three classrooms ranges from 7 to 25 minutes a day, steps can be taken to help teachers at the lower end develop strategies to improve academic learning time.

The advantages to this approach are clear. If we do not know how effective we are in the way time is used, priorities and improvements cannot be made. Although additional time and limited amounts of money are likely to be required, the potential benefits far outweigh the costs.

7. Lengther the school day and/or the school year.

Our technological society increasingly demands higher levels of skills if students are to perform in the work force without extensive additional training. There simply may not be enough time available to learn all that is needed. States and school districts must address this difficult issue and be prepared to lengthen the school day and/or the school year.

The advantage of providing additional time is that students will have more opportunity to learn. The disadvantage of the approach is that the cost for education will increase. This approach will be successful only when the American public understands the importance of education to the productivity of our society.

5. CONCLUSION

Time is a valuable resource that cannot be wasted. At a minimum, knowledge of academic learning time offers a framework for analyzing current practice and suggests alternative means of increasing student achievement. The challenge facing policy makers, administrators and teachers is combining their knowledge of academic learning with the needs of the children they are responsible for educating, and developing the best possible learning experiences for them.

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